

Module 2: Loops and Functions

Case Study

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Things you will learn in this case-study:

1. Working with conditional statements – ‘if’, ‘if..else’
2. Working with Looping statements – ‘while’, ‘for’
3. Using inbuilt functions to get summarized results – ‘apply()’, ‘map_dbl()’
4. Creating customized functions

Back Ground:

Sam aced his first semester exam on “Fundamentals of R Programming”. He is now in his second semester and has taken up the course “Intermediate R Programming”. His professor will be taking a practical exam on the topic ‘Loops and Functions’.

Objective:

Consider yourself to be Sam, who will be appearing for the practical exam on “Loops and Functions”. Based on the knowledge you acquired in Module 2, you are expected to complete the below mentioned activities:

You should do the following:

1. Given a vector “First_Hundred”, which comprises of sequence of first hundred natural numbers:
 - Change all the odd numbers to the string “ODD”
 - Change all the even numbers to the string “EVEN”
2. From the “iris” dataset, find the number of observations whose “Sepal.Length” is greater than ‘6.5’ by using only loops and conditional statements
3. “CO2” is a preloaded data-set in R. From the “CO2” data-set, find the mean ‘uptake’ of only those observations where Type is “Mississippi” and Treatment is ‘chilled’. You can use only loops and conditional statements.
4. On the “CO2” data-set, use ‘tapply()’ function to obtain mean, median, minimum and maximum values of ‘uptake’ with respect to the ‘Treatment’ column
5. ‘swiss’ is a preloaded data-set in R. Using the ‘invoke_map()’ function, find out the minimum ‘Fertility’ and maximum ‘Infant.Mortality’ from the ‘swiss’ data-set.
6. Create a custom function “dice()” which will give a random number between 1-6 every time the function is invoked.

Submission should include the following:

1. Answers to the above questions. Print the first five rows as output wherever applicable.
2. Summary on approach should be documented and submitted for each question.
3. R Code File.

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